ABSTRACT OF THE DISCLOSURE

During reception of a training signal in a received signal $\mathbf{R}(n)$ an estimated impulse response value $\mathbf{H}_m(n)$ of an M-channel channel, and a tap coefficient $\mathbf{G}(n)$ of a linear filter 111 is calculated by an adaptive algorithm through the use of the received signal $\mathbf{R}(n)$ and the training signal b(n). For an information symbol of the received signal $\mathbf{R}(n)$, the received signal $\mathbf{R}(n)$ is subjected to linear filtering with the most recently calculated tap coefficient $\mathbf{G}(n)$, and the linear filtering output $\mathbf{Z}(n)$ and the most recently estimated impulse response value $\mathbf{H}_m(n)$ are used to calculate a soft decision value λ_1. In the second and subsequent rounds of equalization, the likelihood b′(n) of a soft decision value $\lambda_2[b(n)]$ from a decoder is calculated, and a replica is generated by linear-filtering the likelihood b′(n) with an estimated impulse response value vector $\mathbf{H}_L(n)$ obtained by approximating intersymbol interference with the current code b(n) to zero. A difference signal $\mathbf{R}_c(n)$ between the replica and the received signal is calculated, and the estimated impulse response value vector $\mathbf{H}_L(n)$ is used to update the tap coefficient $\mathbf{G}(n)$. Then the signal $\mathbf{Z}(n)$ is obtained by linear-filtering the difference signal $\mathbf{R}_c(n)$ with the updated tap coefficient $\mathbf{G}(n)$, and the signal $\mathbf{Z}(n)$ and the estimated impulse response value vector $\mathbf{H}_L(n)$ are used to calculate the soft decision value λ_1.